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10/089,766	08/14/2002	Eric J. Detwiler	DP-301411	2851

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EXAMINER

TUNG, TA HSUNG

ART UNIT	PAPER NUMBER
1753	8

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/089,766

Applicant(s)

DETWILER ETAL

Examiner

T. TUNG

Group Art Unit

1753

Paper No. 7

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 10/03/03
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-26 is/are pending in the application.
- ☐ Of the above claim(s) is/are withdrawn from consideration.
- ☐ Claim(s) is/are allowed.
- ☒ Claim(s) 1-3, 6-26 is/are rejected.
- ☒ Claim(s) 4, 5 (would be allowable in independent form) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
  - ☐ All ☐ Some\* ☐ None of the:
    - ☐ Certified copies of the priority documents have been received.
    - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
    - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

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Claims 1-3, 6, 10, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasayama et al 4,900,425.

Applicant argues that Sasayama is silent as to the size of the reference electrode in relation to the reference gas channel. Also, patent drawings are not necessarily to scale. Thus, it is not possible to ascertain if the portion of the reference electrode in contact with the reference gas channel is less than about 90% of the reference electrode surface area.

This argument is not persuasive. Even though patent drawings may not be exactly to scale, they generally show relative sizes of one component to another. Further, while applicant may have a point if the range of surface area being claimed is a narrow, critical range, the argument rings hollow when applicant is claiming 1-90% of all possible values. If there is a small (10%) portion of the reference electrode not in contact with the reference gas channel, the present claim language would be met. The patent clearly shows more than 10% of the reference electrode outside of the reference gas channel.

It is further argued that the figures in Sasayama are cross sectional views, and it is impossible to tell what percentage of the reference electrode area actually contacts the reference gas channel.

This argument is further not persuasive. When there is no indication or reason why the reference electrode 12 would not extend fully in all dimensions, it can be presumed that the reference electrode does so extend.

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Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al in view of Yamada et al 5,976,350 or Kato et al 6,287,439.

Applicant appears to argue that the secondary references are directed to solving different problems than that of the instant invention. This argument is not persuasive. Yamada or Kato is relied upon to show that the impedance values claimed by applicant are conventional for solid electrolyte sensors. For a secondary reference to be proper, there is no requirement that it mirrors the primary reference in all aspects.

Claims 12-16, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al in view of Schneider et al 5,529,677 or Wiedenmann et al 5,169,512.

Applicant appears to argue that the secondary references do not cure the deficiency of the primary reference. This is not a separate and distinct argument. It suffices to state that the formation of a reference gas channel by burning out a fugitive material is conventional practice, as demonstrated by the secondary references. Employing such a conventional means for effecting the reference gas channel in Sasayama would have been obvious to one of ordinary skill in the art in the absence of unexpected result. Certainly, applicant has not shown, or even alleged, any unexpected result to evolve from this conventional practice.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al in view of Schneider et al or Wiedenmann et al and Yamada et al or Kato et al.

The additional feature of the sensor impedance is rendered obvious by Yamada or Kato, as discussed before.

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Claims 21, 22, 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al in view of Duce et al 5,384,030 and Wiedemann et al.

These claims differ from Sasayama by calling for the reference electrode to have a diameter that is up to about 85% of the width of an insulating layer which is in contact with the reference electrode.

Duce discloses a reference electrode 22 in contact with an insulating (alumina) layer 18. From figure 1, it is evident that the width of the electrode is less than 85% of the width of the layer. See col. 3, lines 38-52. It would have been obvious to make Sasayama's substrate portion 30 of alumina in view of Duce, because alumina would serve better as an insulation to avoid electrical interference between the electrodes and heater 62 of Sasayama. It would also have been obvious for the Sasayama reference electrode to have a width less than that of the insulating layer in view of Duce so that it can be protected and supported thereby.

Applicant's claim language (claim 21, line 4) calls for "a diameter", which implies that the reference electrode has a circular surface area. Wiedemann shows electrodes 4 and 5 to have a circular configuration (see figure 1). It would have been obvious for Sasayama to adopt a circular shape for its reference electrode in view of Wiedemann. Shapes are a matter of design choice in the absence of unexpected result.

The citation of Duce is prompted by applicant's newly-submitted claims 21-26.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasayama et al in view of Duce and Wiedemann et al and Yamada et al or Kato et al.

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This claim further differs by calling for the sensor to have a certain impedance value. As discussed before, such an impedance value is rendered obvious by Yamada or Kato.

Claims 21, 24, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Takao et al 4,107,019.

Takao discloses a reference electrode 14 in contact with an insulating layer 12b. From figures 3 and 4, it appears that the reference electrode is circular in configuration. From figure 1, it is evident that the diameter of the reference electrode is less than 80% of the width of the insulating layer and that the reference electrode is different in size from another electrode 18. See col. 4, line 21 to col. 6, line 53.

The citation of Takao is prompted by the newly-submitted claims 21-26.

Claims 21, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takao et al in view of Wiedemann et al.

If Takao were construed as not to disclose a reference electrode with a circular shape, applicant's claims differ in that respect.

As discussed before, Wiedemann discloses (see fig. 1) electrodes with a circular configuration. It would have been obvious for Takao to adopt a circular reference electrode in view of Wiedemann because Takao (figures 3 and 4) show a circular substrate. A circular reference electrode would conform with the substrate.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takao et al in view of Yamada et al or Kato et al.

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This claim differs by calling for the sensor to have a certain impedance. As discussed before, Yamada or Kato renders obvious such a sensor impedance.

Claims 21-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21, line 4 recites “a diameter”, which suggests that the reference electrode is circular. Applicant should confirm that he intends to recite a circular reference electrode.

Claim 21, line 4, “is disposed” is vague. Does applicant mean that the reference electrode is in contact with an insulating layer, or does applicant mean that the reference electrode is coated onto the insulating layer? If the latter, applicant should point out the basis for that in the original disclosure.

Claim 21, line 5, “is up to about 60% to about 85%” makes no sense, because up to 85% includes 60%. Note that applicant is claiming up to 85%, not 60% to 85%.

Claim 22, lines 3-4, “the reference gas channel” does not have antecedent basis.

Claim 24, lines 1-2, “is up to about 70% to about 80%” makes no sense, because up to 80% includes 70%.

Claims 4 and 5 distinguish over the prior art of record in that none of the prior art discloses or fairly suggests a reference electrode whose surface area in contact with a reference gas channel is less than 25% or less than 15%. These claims would be allowable in independent form.

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Applicant's attention is directed to claim 9, line 2, where the expression "below about 3,400 ohms or less" is vague. Note that "or less" is included by "below about 3,400 ohms".

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

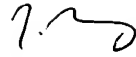
The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9306.



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A handwritten signature in black ink, appearing to be 'Ta Tung', with a stylized flourish at the end.

Ta Tung

Primary Examiner

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